REMARKS

Claims 1-6 and 8-27 are pending in the application. Claim 1 has been amended. Claims 15-27 have been withdrawn from consideration.

I. CLAIM REJECTIONS UNDER 35 U.S.C. § 102(b)

Claims 1-6, 8-9 and 12-14 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Chou (U.S. Patent No. 6,482,742). Claim 10 has been rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Chou.

Applicants respectfully traverse the rejections for at least the following reasons. Claim 1 has been amended to clarify that the cavity has a first wall, the first wall comprising a flexible membrane. The flexible membrane engages either the template or the substrate. With the claimed apparatus, a pattern is transferred from a template to a radiation polymerizable fluid that is carried on a substrate. The apparatus includes support means for supporting the template and the substrate in mutual parallel alignment. The apparatus further includes a cavity having a first wall. The first wall of the cavity comprises a flexible membrane that engages either the template or the substrate. The flexible membrane is a separate element that is distinct from the template and the substrate.

It is the Examiner's position that Chou et al. discloses a cavity having a first wall comprising a flexible membrane. The Examiner relies on the plastic bag 60 that seals the mold assembly as illustrated in Figure 6A (below), or the peripheral sealing clamp 61 illustrated in Figure 6B (below) as embodying the cavity. The Examiner further relies on the mold 10 and/or the substrate 20 as embodying the flexible membrane, stating that the mold 10 and the substrate 20 engage each other.

FIG. 6A

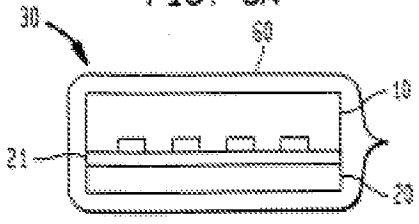
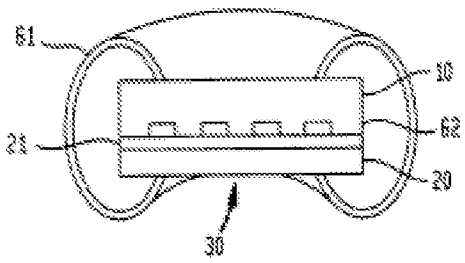


FIG. 6B



Chou et al.

The Examiner's position that the mold 10 is both the template and the flexible membrane, or that the substrate 20 is both the substrate and the flexible membrane is inconsistent with the apparatus presently claimed. Chou et al. fails to disclose a cavity having a first wall, the first wall comprising a flexible membrane devised to engage either the template or the substrate, and means for applying an adjustable overpressure to a medium present in the cavity wherein the membrane is transparent to a wavelength range of said radiation, the radiation source being positioned behind said membrane. Because Chou et al. fails to disclose all of the recited features of the claimed apparatus, Chou et al. does not anticipate claims 1-6, 8-10 and 12-14. Accordingly the rejection under 35 U.S.C. §102(b) should be withdrawn.

Applicants further submit that apparatus as presently claimed would not have been obvious in view of the teachings of Chou et al. All of the embodiments disclosed in Chou et al. have at least one significant drawback. Each requires putting the template and substrate into a pressurized enclosure or at least making the template and the substrate part of such a pressurized enclosure. For the purpose of achieving high production speed when transferring patterns from the template onto a substrate, most embodiments of Chou et al. require the user to press the template and substrate firmly together before transferring them or putting them in an external pressurized vessel. These multiple steps will definitely slow down the pattern production process. While the embodiments disclosed in Figs. 6C and 6D may not have problems with production speed, they most likely lack accuracy in the transfer of the structures from the template to the substrate, since the absence of a membrane

will likely introduce air pockets between the template and the substrate during imprint.

In contrast, with the apparatus of the present invention, the presence of the flexible membrane increases transfer accuracy due to the tight engagement of the substrate or the template during imprint. The apparatus of the presently claimed invention provides a simpler and more effective way, particularly in the case of nano-sized patterns, to achieve the transfer of a pattern from a template to a substrate. Moreover, the absence of any external pressure chamber enclosing the substrate and template according allows for a more rapid imprint process, since the step of clamping the substrate and template together and then transferring them to a pressure chamber is eliminated. In view of the foregoing amendments and remarks, Applicants respectfully submit that the apparatus of claims 1-6, 8-10 and 12-14 is neither anticipated by nor obvious in view of Chou et al.

II. REJECTION OF CLAIM 11 UNDER 35 U.S.C. § 103(a)

Claim 11 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Chou et al. in view of Wolff (U.S. Patent No. 4,095,113). It is the Examiner's position that it would have been obvious to use Wolff's xenon lamp as a source of UV radiation for the invention of Chou et al.

Applicants respectfully traverse the rejection for at least the following reasons. As discussed above, Chou et al. fails to disclose an apparatus that includes a cavity having a first wall, the first wall comprising a flexible membrane devised to engage either the template or the substrate, and means for applying an adjustable overpressure to a medium present in the cavity wherein the membrane is transparent to a wavelength range of said radiation, the radiation source being positioned behind said membrane. Wolff is directed a tanning machine that produces UV radiation for the purpose of browning human skin. As such, Wolff does not cure the deficiencies of Chou et al. Even if one skilled in the art where somehow motivated to look to Wolff for a source of UV radiation in order to modify the lithographic apparatus of Chou et al., the resulting modified apparatus would not include all of the recited features of

the apparatus of claim 11. Because prima facie obviousness has not been established, the rejection of claim 11 under 35 U.S.C. §103(a) should be withdrawn.

IV. CONCLUSION

Accordingly, claims 1-6 and 8-14 are believed to be allowable and the application is believed to be in condition for allowance. A prompt action to such end is earnestly solicited.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should a petition for an extension of time be necessary for the timely reply to the outstanding Office Action (or if such a petition has been made and an additional extension is necessary), petition is hereby made and the Commissioner is authorized to charge any fees (including additional claim fees) to Deposit Account No. 18-0988.

Respectfully submitted,

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